

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) Mode rotation piezoelectric motor ~~(1)~~ comprising a stator ~~(10)~~ fixed to a frame ~~(3)~~ of the motor and designed to bend perpendicular to a principal direction ~~(D)~~, said stator comprising two electroactive components ~~(12, 13)~~ stacked in said principal direction and adapted to provide bending excitation, surrounded by two counter-weights ~~(11, 14)~~, ~~characterised in that~~wherein said stator ~~(10)~~ has geometric dissymmetry ~~(52)~~ in order to create resonance dissymmetry and wherein at least one of said bending excitation and resonance dissymmetry is angularly shifted from one side to the other of an interface between said electroactive components.

2. (previously presented) Motor according to claim 1, characterised in that the electroactive components are piezoelectric ceramics.

3. (previously presented) Motor according to claim 1, characterised in that the geometric dissymmetry is obtained by means of a dissymmetrical method of fixing the stator to the frame.

4. (previously presented) Motor according to claim 1, characterised in that the geometric dissymmetry is obtained by means of the use of anisotropic materials for the stator.

5. (currently amended) Motor according to claim 1, characterised in that the geometric dissymmetry is obtained by means of a dissymmetrical shape ~~(52)~~ of the stator, and particularly a dissymmetrical shape of the counter-weights.

6. (currently amended) Motor according to claim 5, characterised in that the stator comprises piezoelectric ceramics in the form of wafers, the wafers and counter-weights being approximately cylindrical in shape and coaxial to a shaft ~~(2)~~ connecting the stator to the frame ~~(3)~~, said counter-weights comprising recesses on either side of the shaft ~~(52)~~.

7. (currently amended) Motor according to claim 5, characterised in that the stator comprises counter-weights that are approximately identical in shape to each other, so that for two respective axial planes ~~(P1, P2)~~ defined so that a first axial plane P1 for a first counter-weight ~~(11)~~ represents on the second counterweight ~~(12)~~ a plane orthogonal to the second axial plane P2 for said second counter-weight ~~(12)~~, the two axial planes ~~(P1, P2)~~ form a non-zero angle to each other on the stator.

8. (currently amended) Motor according to claim 5, characterised in that each wafer ~~(12, 13)~~ comprises around an axis of rotation of the rotor ~~20~~, sectors of piezoelectric material ~~(123, 124, 133, 134)~~ with alternate axial polarity ~~(P+, P-)~~, arranged so that each of the sectors on a first wafer is at least partly opposite a sector with the opposite polarity on another wafer.

9. (currently amended) Motor according to claim 7, characterised in that the two axial planes ~~(P1, P2)~~ form an angle approximately equal to 90°.

10. (currently amended) Motor according to claim 9, characterised in that the stator comprises wafers that are approximately identical in shape to each other, so that for two respective median planes ~~(PM1, PM2)~~ defined identically for each of the wafers independently, the two median planes form a 90° angle to each other, and a first ~~(P1)~~ of the axial planes ~~(P1, P2)~~ of the counter-weights is co-planar with a first ~~(PM1)~~ of the median planes, and respectively, a second ~~(P2)~~ of the axial planes is co-planar with a second ~~(PM2)~~ of the median planes.

11. (currently amended) Motor according to claim 9, characterised in that the stator comprises wafers that are approximately identical in shape to each other, so that for two respective median planes ~~(PM1, PM2)~~ defined identically for each of the wafers independently, the two planes form a 180° angle to each other and the axial planes ~~(P1, P2)~~ form a 45° angle to the median planes.

12. (currently amended) Motor according to claim 6, characterised in that it comprises a single-phase power supply ~~(40)~~ that comprises an earth ~~(42)~~ and a phase ~~(41)~~, so that the phase is connected to ~~an said interface (1213) between two wafers~~ and the earth is connected to surfaces ~~(112, 141)~~ of said wafers respectively opposite the said interface ~~(1213)~~, or so that the earth is connected to ~~an said interface (1213) between two wafers~~ and the phase is connected to surfaces ~~(121, 132)~~ of said wafers respectively opposite said interface ~~(1213)~~.

13. (currently amended) Motor according to claim 10, characterised in that it comprises a single-phase power supply ~~(40)~~ that comprises an earth ~~(42)~~ connected to ~~an said interface (1213) between two wafers (12, 13)~~ and a phase ~~(41)~~ powering a primary of a transformer, said transformer comprising two identical secondaries ~~(S1, S2)~~, a first ~~(S1)~~ of which is connected between the earth and a surface ~~(121)~~ of one of the wafers ~~(12)~~, opposite the interface ~~(1213)~~, to supply to it a first phase ~~411~~, and the other secondary ~~(S2)~~ is connected by means of an inverter ~~(K)~~ between the earth and a surface ~~(132)~~ of the other of the wafers ~~(13)~~, opposite the interface ~~(1213)~~ to supply it with a second phase ~~(412)~~ equal or opposite to the first phase ~~(411)~~ depending on the position of the inverter.

14. (currently amended) Method of powering a mode rotation piezoelectric motor ~~(1)~~ comprising a stator ~~(10)~~ fixed to a frame ~~(3)~~ of the motor and designed to bend perpendicular to a principal direction ~~(D)~~ to provide excitation, said stator comprising piezoelectric ceramics ~~(12, 13)~~ stacked in said principal direction, surrounded by two counter-weights ~~(11, 14)~~, said stator ~~(10)~~ having geometric dissymmetry ~~(52)~~ in order to create resonance dissymmetry, ~~characterised in that~~ wherein a single-phase power supply ~~(40)~~ is used and one terminal of said power supply is connected to a mutual interface of the ceramics and another terminal of said power supply is connected to two other interfaces on either side of the mutual interface, and wherein at least one of said bending excitation and resonance dissymmetry is angularly shifted from one side to the other of the mutual interface.

15. (currently amended) Method according to claim 14, characterised in that an intermediate usage frequency ~~(Fu)~~ with two respective resonance frequencies ~~(F1, F2)~~ of two bending modes ~~(M1, M2)~~ characteristic of the resonance dissymmetry is used for the power supply ~~(40)~~.

16. (original) Method according to claim 15, characterised in that a power supply frequency is used that is more particularly selected so that the phase difference between the two bending modes is 90° .